



6712-01

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Parts 73 and 74

[MB Docket No. 15-146; GN Docket No. 12-268; FCC 15-68]

Preserving Vacant Channels in the UHF Television Band for Unlicensed Use

AGENCY: Federal Communications Commission.

ACTION: Proposed rule.

SUMMARY: In this document, the Federal Communications Commission (Commission) provides notice and an opportunity to comment on its plan to preserve one vacant television channel in the UHF television band in each area of the United States for shared use by white space devices and wireless microphones. The Commission recognizes that, following the Incentive Auction and repacking of the television bands, there will likely be fewer unused television channels available for use by either unlicensed white space devices or wireless microphones. These devices are important to businesses and consumers, and the Commission therefore seeks to ensure their continued viability.

DATES: Comments due on or before **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**; reply comments due on or before **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. Written comments on the proposed information collection requirements, subject to the Paperwork Reduction Act (PRA) of 1995, Pub. L. 104-13, should be submitted on or before **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: You may submit comments, identified by MB Docket No. 15-146, GN Docket No. 12-268 and/or FCC 15-68, by any of the following methods:

- Federal eRulemaking Portal: <http://www.regulations.gov>. Follow the instructions for submitting comments.

- Federal Communications Commission's Web Site: <http://www.fcc.gov/cgb/ecfs/>. Follow the instructions for submitting comments.
- Mail: Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail (although we continue to experience delays in receiving U.S. Postal Service mail.) All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.
- People with Disabilities: Contact the FCC to request reasonable accommodations (accessible format documents, sign language interpreters, CART, etc.) by e-mail: FCC504@fcc.gov or phone: 202-418-0530 or TTY: 202-418-0432.

For detailed instructions for submitting comments and additional information on the rulemaking process, see the **SUPPLEMENTARY INFORMATION** section of this document.

In addition to filing comments with the Secretary, a copy of any PRA comments on the proposed collection requirements contained herein should be submitted to the Federal Communications Commission via e-mail to PRA@fcc.gov and to Cathy.Williams@fcc.gov and also to Nicholas A. Fraser, Office of Management and Budget, via e-mail to Nicholas_A._Fraser@omb.eop.gov or via fax at 202-395-5167.

FOR FURTHER INFORMATION CONTACT: Shaun Maher, Shaun.Maher@fcc.gov of the Media Bureau, Video Division, (202) 418-2324, and Paul Murray, Paul.Murray@fcc.gov of the Office of Engineering and Technology, (202) 418-0688. For additional information concerning the PRA information collection requirements contained in this document, contact Cathy Williams, Federal Communications Commission, at (202) 418-2918, or via e-mail Cathy.Williams@fcc.gov

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Notice of Proposed Rulemaking (NPRM), FCC 15-68, adopted June 11, 2015, in MB Docket No. 15-146. The full text of this document is available for inspection and copying during regular business hours in the FCC Reference Center, 445 12th Street, SW., Room CY-A257, Portals II, Washington, DC 20554. This document is available in alternative formats (computer diskette, large print, audio record, and Braille). Persons with

disabilities who need documents in these formats may contact the FCC by e-mail: FCC504@fcc.gov or phone: 202-418-0530 or TTY: 202-418-0432.

Paperwork Reduction Act of 1995 Analysis

The NPRM contains proposed new or modified information collection requirements. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public and the Office of Management and Budget (OMB) to comment on the information collection requirements contained in this document, as required by the Paperwork Reduction Act of 1995, Public Law 104-13. In addition, pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, see 44 U.S.C. 3506(c)(4), the Commission seeks specific comment on how it might further reduce the information collection burden for small business concerns with fewer than 25 employees.

Synopsis of Notice of Proposed Rulemaking

1. The current UHF television band consists of 228 megahertz of spectrum divided into 38 six megahertz channels (channels 14-51, except channel 37). These channels are allocated and assigned on a primary basis for the licensed full power and Class A broadcast television services. Other licensed broadcast-related users are permitted to operate on a secondary basis, including LPTV and TV translator stations, fixed BAS, and low power auxiliary stations (“LPAS”), including licensed wireless microphones. Unlicensed operations by white space devices and wireless microphones also are permitted to operate on these channels.

2. In the Incentive Auction Report and Order, the Commission adopted rules to implement the broadcast television spectrum incentive auction. As discussed more fully in the Incentive Auction Report and Order, the incentive auction will affect the operations of primary, secondary, and unlicensed users operating in the current television bands. The Commission addressed the impact on each of these groups of users in various parts of the Incentive Auction Report and Order. With respect to white space devices and wireless microphones, the Commission took several steps to accommodate their operations.

3. Both white space devices and wireless microphones (licensed and unlicensed) are permitted to operate in the TV bands on channels at locations where the spectrum has not been assigned

for use by particular broadcast licensees (i.e., “white spaces”). The rules and requirements for their operations differ, however. Licensed wireless microphones operate pursuant to the rules for LPAS operations set forth in part 74, subpart H, 47 CFR 74.801 et seq., while, as noted above, unlicensed wireless microphones operate pursuant to a 2010 waiver and certain part 15 rules. Unlicensed white space devices operate pursuant to part 15, subpart H rules. In the TV White Spaces Second MO&O adopted in 2010, the Commission established rules pursuant to which wireless microphone users and unlicensed white space device users currently have access to unused TV bands channels. In that order, the Commission provided that, where available, the two unused television channels nearest channel 37 (above and below) would be designated for wireless microphone operations and not be made available for white space devices. Pursuant to this order, white space devices are not permitted on the first channel on each side of TV channel 37 that is not occupied by a licensed service. In the Incentive Auction Report and Order, in anticipation of the repurposing of some TV band spectrum for wireless services and the decreased amount of TV band spectrum that would remain after repacking, the Commission concluded that following the incentive auction it should no longer continue to designate any unused television channel solely for use by wireless microphones, determining instead that any such channels should be made potentially available for white space device use as well.

4. Furthermore, the Commission anticipated that at least one television channel in the UHF band in all (or nearly all) areas of the United States would not be assigned to a television station in the repacking process, because the separation between television stations will be necessary to avoid interference between primary broadcast stations in the final channel assignment process. The Commission noted that there may be a few areas with no spectrum available in the TV bands for wireless microphones and white space devices to share. Considering the important public interest benefits provided by both wireless microphones and white space devices, the Commission stated its intent, following notice and comment, to designate one channel in each area for shared use by wireless microphones and white space devices. The Commission stated that it sought to “strike a balance between the interests of all users of the television bands,” including secondary broadcast stations as well as

wireless microphone and white space device operators, for access to the UHF TV spectrum.

5. In this NPRM, the Commission seeks comment on preserving in each area of the country at least one vacant television channel for use by white space devices and wireless microphones after repacking. Recognizing that implementing this objective will preclude other uses of the preserved channel, in the first section below, the Commission tentatively concludes that it will preserve one vacant television channel for use by white space devices and wireless microphones. In the second section, the Commission seeks comment on which broadcast applicants proposing operations in the repacked UHF television band should be required to make a demonstration that their proposed new, displacement, or modified facility will not eliminate the last available vacant channel in an area. In the third section, the Commission proposes that the vacant channel preserved will be in the UHF band in the range of channel 21 and above, and that the specific vacant channel preserved will vary depending on the particular area. The Commission also proposes that vacant channel availability at a given location will be determined using the same criteria currently specified in Commission rules for determining where white space devices and wireless microphones can operate. In addition, the Commission proposes procedures and other details for the vacant channel demonstration.

Preserving One Vacant Television Channel for Use by White Space Devices and Wireless Microphones

6. White space devices and wireless microphones provide significant public benefits. In the Incentive Auction Report and Order, the Commission once again recognized the value of these important services. The Commission also found that operations of unlicensed devices under part 15 rules are an important part of our nation's communications capabilities, and have provided manufacturers and developers with the flexibility to devise a wide variety of innovative standards and devices, like WiFi and Bluetooth, which are thriving in bands that were formerly considered to be lacking significant commercial value. The Commission explained that it was taking actions to make available a significant amount of spectrum for white space device operations, including in the post-auction television bands, in order to help create certainty for the unlicensed industry and thereby promote greater innovation in new devices and services, including increased access to broadband services across the country. The Commission also

found that “[w]ireless microphones provide many important functions that serve the public interest” by playing “an essential role in enabling broadcasters and other video programming networks to serve consumers,” by “significantly enhanc[ing] event productions in a variety of settings,” and by “creating high quality content that consumers demand and value, and contribut[ing] substantially to our economy.” After the incentive auction and repacking of the television bands, however, there will be fewer unused television channels available for use by white space devices and wireless microphones, although the Commission anticipated that there will be at least one channel in the UHF band in all areas that is not assigned to a television station in the repacking process. The Commission tentatively concludes that preserving a vacant channel in every area for use by white space devices and wireless microphones will ensure that the public continues to have access across the nation to the significant benefits described above, consistent with its intent to strike “a balance between the interests of all users of the television bands, including secondary broadcast stations as well as [white space] devices and wireless microphones, for access to the UHF TV spectrum.” In the part 15 NPRM, the Commission also stated that “[s]uch a channel would simply appear in the white spaces database as vacant and would therefore be available for white space devices under the existing rules as well as any new or modified rules it adopts in [the part 15] proceeding.”

7. The Commission believes that its proposal, implemented as proposed below, will not significantly burden broadcast applicants in terms of either the continued availability of channels in all areas or the administrative burdens of compliance. After the final channel assignments are made following the incentive auction, multiple vacant channels will exist in most areas as a result of the co- and adjacent-channel separation requirements necessary to protect primary broadcast stations from interference from each other. The 100 repacking simulation results previously published by Commission staff show that the areas encompassing the vast majority of population across the country would have at least two vacant channels available. The Commission arrives at this conclusion by examining spectrum availability for white space devices using the limited channel range where both wireless microphones and personal portable devices can operate under current rules. In the part 15 NPRM the Commission proposed

to permit white space devices to operate on additional TV channels, thus resulting in multiple vacant channels being available in areas encompassing the vast majority of population across the country. In any event, the effect of its proposal would be to reduce by only one the total number of vacant channels that would otherwise be available in an area. Therefore, the impact on broadcast applicants, including LPTV and TV translator stations, in terms of the availability of channels for future use, will be limited because multiple vacant channels will still exist in all or most markets as a consequence of the need to avoid interference between primary broadcast stations in the incentive auction final channel assignment process. Of course, the impact in a given area will depend on the number of such applicants [and the nature of their applications] as well as on the overall availability of vacant channels after repacking and the 39-month post-auction transition period. In some areas, independent of the Commission's proposal here, the number of vacant channels may be reduced as a result of these factors. In addition, the Commission's proposed plan involves a streamlined method for broadcast applicants to determine quickly the impact that facilities they intend to propose will have on the continued availability of vacant channels. As discussed in more detail below in Section III. C. 2., broadcast applicants may contact one of the existing databases used to identify available channels for part 15 white space devices ("white spaces database") to determine compliance with the Commission's proposed rules, and thus the vacant channel demonstration would not impose a significant burden. The Commission seeks comment on the cost of complying with the proposed requirement to make a vacant channel demonstration and how it may affect broadcast applicants' future service or technical plans.

Applicants Required to Make a Vacant Channel Demonstration

8. In this section, the Commission seeks comment on which broadcast applicants proposing operations in the repacked UHF television band should be required to make a demonstration that their proposed new, displacement, or modified facility will not eliminate the last available vacant UHF channel in an area for use by white space devices and wireless microphones. Specifically the Commission (1) tentatively concludes that applicants for LPTV, TV translator, and BAS facilities should be required to make the demonstration commencing with the post-auction displacement filing window for operating

LPTV and TV translator stations; (2) tentatively concludes that the vacant channel demonstration requirement should not apply to applications for modification of Class A television stations filed during the 39-month Post-Auction Transition Period, but that it should apply to such applications filed after the end of this period; and (3) tentatively concludes that the vacant channel demonstration should not apply to applications for modified full power television station licenses filed during the 39-month Post-Auction Transition Period and seek comment on whether it should apply to full power modification applications filed after the end of this period and in full power allotment proceedings.

LPTV, TV Translators, and BAS

9. The Commission tentatively concludes that applicants for LPTV, TV translator, and BAS facilities should be required to demonstrate that their proposed new, displacement, or modified facilities would not eliminate the last available vacant television channel in an area for use by white space devices and wireless microphones. In the Incentive Auction Report and Order, the Commission declined to extend repacking protection to the more than 5,500 licensed secondary LPTV and TV translator stations. Following the release of the Incentive Auction Report and Order, the Media Bureau announced a freeze on the filing of digital replacement translator (“DRT”) and displacement applications for LPTV and TV translator stations. After the auction, the Media Bureau will announce a limited application filing window for operating LPTV and TV translator stations displaced by the repacking and reallocation of the television bands. The Commission proposes that these stations will be required to demonstrate that the proposed displacement facilities would not eliminate the last remaining vacant channel in the repacked television band in an area; applications that do not comply with this requirement will be dismissed.

10. The Commission believes it appropriate to require LPTV and TV translator stations displaced by the incentive auction and repacking to engineer their proposed replacement facilities so as not to eliminate a sole remaining vacant channel in an area for shared use by white space devices and wireless microphones. The Commission also notes that it recently released a notice of proposed rulemaking seeking comment on ways to preserve the availability of channel access for LPTV and TV translator stations in the repacked television band through such means as channel sharing. Channel

sharing could help ensure that displaced stations can find opportunities for sharing available channel(s) in the repacked band in order to provide their services. Because LPTV and TV translator stations' coverage areas are significantly smaller than a full power television station, these stations can engineer facilities in the unused spectrum between full power stations, and their proposals thus are more likely than those of full power stations to eliminate vacant channels. Moreover, the Commission anticipates that most displaced LPTV and TV translator stations will file applications in this post-auction displacement window. Thus, were the Commission not to require these stations to consider vacant channel availability in engineering their displacement facilities, its goal of preserving one vacant channel in all areas for shared use by white space devices and wireless microphones would be undermined. For the same reason, the Commission also proposes to apply the vacant channel demonstration to all non-displacement LPTV and TV translator applications, i.e., applications for modified facilities or new channels, and any BAS applications, filed on or after the Media Bureau's announcement of the limited application filing window for LPTV and TV translator displacement applications.

11. The Commission seeks comment on whether the proposed vacant channel demonstration should apply to displaced digital replacement translator ("DRT") stations. This service was established to assist full power stations transitioning from analog to digital to restore service to portions of a station's existing analog service area that would no longer be able to receive service after the transition. While the Commission declined to protect DRTs in repacking, it afforded DRT displacement applications priority over other LPTV and TV translator displacement applications in cases of mutual exclusivity in order to mitigate the potential impact of the repacking process on DRTs. Should the Commission similarly seek to mitigate the impact of its proposed vacant channel demonstration requirement on displaced DRTs beyond the potential for a waiver and, if so, how? Displaced DRTs could seek a waiver of the proposed rules based on the Commission's standard waiver criteria. Section 1.3 of the rules states that a waiver will be granted if "good cause" is shown. The Commission may exercise its discretion to waive a rule where the particular facts make strict compliance inconsistent with the public interest. In addition, the Commission may take into account considerations of hardship, equity, or more effective implementation

of overall policy on an individual basis. Waiver of the Commission's rules is appropriate only if both (i) special circumstances warrant a deviation from the general rule, and (ii) such deviation will serve the public interest. Additionally, what would be the effect of such an exemption on the nationwide availability of a vacant channel for wireless microphones and unlicensed white space devices? The Commission notes that it has also proposed to establish a new "digital-to-digital" replacement translator service, similar to the DRT service, which will allow eligible full power stations to recover lost digital service area that may result from the reverse auction and repacking process. If the Commission establishes this new translator service, it tentatively concludes to treat this service the same as DRTs for purposes of application of the vacant channel demonstration.

12. The Commission's proposal that LPTV and TV translator stations demonstrate in their displacement applications that the proposed facility will not eliminate the last available vacant channel in any area may result in a new type of conflict that would prevent the Commission from granting certain applications. Under the Commission's existing rules, applications are considered mutually exclusive if they cannot be granted without causing interference to each other, and mutually exclusive applications generally are resolved through an auction. The Communications Act, however, provides that the Commission shall use engineering solutions, negotiations, threshold qualifications, service regulations and other means to avoid mutual exclusivity where the Commission determines that doing so would serve the public interest. During the displacement window, it is possible that two (or more) stations operating in the same vicinity could file applications for facilities that would not cause such interference but that nonetheless cannot be granted because together they would eliminate the last available vacant channel in an area for use by white space devices and wireless microphones. All displacement applications submitted during the limited application filing window will be considered filed on the last day of the window. Accordingly, displacement applications filed later in the window are not required to consider the displacement proposals in applications filed earlier in the window. At the close of the window, the Commission staff would make mutual exclusivity determinations. Under these circumstances, the Commission tentatively concludes that these applications would be mutually exclusive under §

73.5000(a) of the rules and subject to competitive bidding if the mutual exclusivity is not resolved by the applicants.

13. In addition, the Commission seeks comment on whether LPTV and TV translator displacement applications (including those filed in the post-incentive auction displacement window) should be allowed to “displace” pending applications for new, or minor changes to, LPTV and TV translator stations for purposes of satisfying the vacant channel demonstration. Under the Commission’s current rules, when an LPTV or TV translator displacement application is filed, it may propose causing interference to and “displace” a pending application for new or minor change to an LPTV or TV translator station. It is possible that a LPTV or TV translator displacement application that is filed for a new channel but is treated as a minor change would not be predicted to cause interference to a pending new or minor change application, but the displacement application, if granted, would eliminate the last remaining vacant channel in an area. The Commission proposes to preserve one channel in each area even in these circumstances. In order to accomplish that, in this scenario, should the Commission allow the displacement applicant to satisfy the vacant channel demonstration by proposing that the channel specified in the pending new or minor change application serve as the vacant channel? In other words, should the displacement applicant be allowed to “displace” the pending new or minor change application for purposes of the vacant channel demonstration? In that case, the new or minor change application would be dismissed. The Commission seeks comment on this issue as well as how to choose between applications to be displaced in the situation where there is more than one pending new or minor change application that, if displaced, could satisfy the vacant channel demonstration.

14. The Commission tentatively concludes that it has authority to adopt the proposals outlined above. As discussed above, the Commission tentatively concludes that preserving a vacant channel in every area for use by white space devices and wireless microphones will serve the public interest by ensuring continued access across the nation to the significant benefits provided by white space devices and wireless microphones without significantly burdening broadcast applicants. Moreover, because the proposed new, displacement, or modified facilities of LPTV, TV translator and BAS

applicants are more likely than those of full power stations to eliminate vacant channels, requiring such applicants to demonstrate that their proposed facilities would not eliminate the last available vacant channel in an area will advance the Commission's goal of preserving a vacant channel in all areas for shared use by white space devices and wireless microphones. The Commission seeks comment on this tentative conclusion. In addition, Title III of the Communications Act of 1934, as amended, "endow[s] the Commission with expansive powers," including "broad authority to manage spectrum . . . in the public interest." Determinations with respect to spectrum management policy (including allocation and assignment policies) have long been recognized to be precisely the sort that Congress intended to leave to the broad discretion of the Commission under section 303 of the Communications Act. The Commission also tentatively concludes that its proposal to preserve a vacant channel for use by white space devices and wireless microphones in all areas is consistent with, and not in contravention of, section 6403(b) of the Spectrum Act, which provides for the UHF band reorganization. The Commission recognizes that section 6403(b)(5) of the Spectrum Act provides that "[n]othing in [section 6403(b)] shall be construed to alter the spectrum usage rights of low-power television stations," but section 6403(b)(5) does not affect the Commission's broad authority outside of section 6403(b) to manage spectrum in the public interest, which provides the legal basis for the actions the Commission proposes in this NPRM. To the contrary, section 6403(i)(1) preserves that authority by stating that nothing in section 6403(b) "shall be construed to . . . expand or contract the authority of the Commission, except as otherwise expressly provided." There is no express provision in section 6403(b) prohibiting the Commission from requiring LPTV and TV translator stations to consider how their proposed new, displacement, or modified facilities will impact the availability of vacant channels for white space devices and wireless microphones. Moreover, section 6403(i)(2) states that nothing in section 6403(b) "shall be construed to . . . prevent the implementation of the Commission's 'White Spaces' Second Report and Order . . . in the spectrum that remains allocated for broadcast television use after the reorganization required by" section 6403(b). The Commission's proposals in this NPRM will ensure that white space devices and wireless microphones continue to have access to unused TV bands channels, consistent with the TV White Spaces Second Report and Order.

15. The Commission acknowledges that its proposal to require LPTV and TV translator stations to demonstrate that their proposed operations will not eliminate the last remaining vacant channel diverges to a limited extent from prior Commission decisions stating that future use of the TV bands by primary and secondary broadcast users has priority over wireless microphones and white space devices. As discussed above, however, there will be fewer unused television channels for white space devices and wireless microphones after the incentive auction and repacking of the television band, and the Commission seeks to ensure that the public does not lose access to the significant benefits of wireless microphones and white space devices. Moreover, the Commission believes that the impact of its proposal on LPTV and TV translator stations will be limited in terms of both the availability of channels for future use and the administrative burdens involved. Accordingly, the Commission tentatively concludes that a limited departure is warranted from prior FCC decisions granting secondary LPTV and TV translator station users priority to use of the TV bands over white space devices and wireless microphone users in all circumstances. The Commission seeks comment on this analysis.

Modifications of Class A Television Stations

16. The Commission tentatively concludes that the vacant channel demonstration requirement should not apply to applications for modification of Class A television stations filed during the 39-month Post-Auction Transition Period, but that it should apply to such applications filed after the end of this period. Exempting Class A stations from the vacant channel demonstration during the transition period will facilitate a rapid, non-disruptive transition by maximizing Class A television stations' flexibility to propose expanded facilities and alternative channels. As a practical matter, moreover, Class A stations that are reassigned in the incentive auction will not be able to determine the availability of vacant channels for purposes of the vacant channel demonstration until full power and Class A stations assigned to new channels are able to obtain their initial authorizations. In addition, imposing the requirement would delay the filing of applications for alternate channels and expanded facilities by Class A television stations until final data on vacant channels are available, thereby impeding

the goal of a rapid and non-disruptive 600 MHz band transition for these stations, and undermining their ability to obtain reimbursement of eligible costs within the statutory three-year reimbursement period.

17. In addition to exempting Class A stations that were assigned a new channel in the reverse auction or repacking process, the Commission also tentatively concludes that the vacant channel demonstration requirement should not apply to applications for modification filed during the 39-month Post-Auction Transition Period by Class A stations that were not assigned a new channel. The Commission anticipates that, in some markets, a number of stations will coordinate modifications to their facilities to improve service to the public, and/or facilitate the transition, and that not all stations participating in the coordinated effort will have been assigned new channels. Thus, requiring non-reassigned stations to make a vacant channel demonstration during the Post-Auction Transition Period likewise could undermine the flexibility needed for a rapid, non-disruptive transition.

18. The Commission seeks comment on whether out-of-core Class A-eligible LPTV stations that did not file for a Class A license until after February 22, 2012 should be subject to the vacant channel demonstration requirement. In the Incentive Auction Report and Order, the Commission declined to protect such stations in the repacking process, even if their Class A license applications are granted before the auction. Although these stations would not be protected in the repacking process, the Commission stated that these stations, if displaced, would be permitted to file a displacement application for a new channel during one of the filing opportunities for reassigned full power and Class A stations to file for alternate channels.

19. The Commission tentatively concludes that the vacant channel demonstration requirement should apply to Class A television station modification applications filed after the end of the Post-Auction Transition Period. The transition-related concerns noted above should no longer be an obstacle after the end of the transition. Moreover, as compared to full power stations, a proposed modification of a Class A station has increased potential to impact the availability of the last remaining vacant channel in an area. While full power stations may radiate up to 1000 kilowatts power, Class A stations may radiate only at a maximum operating power of 15 kilowatts, the same as for LPTV and TV

translator stations. Because their coverage areas, like those of LPTV and TV translator stations, are significantly smaller than those of full power television stations, these low power stations can engineer facilities in the unused spectrum between full power stations. Thus, the Commission believes that exempting post-transition Class A television station modification applications from the vacant channel demonstration is not warranted to accomplish its post-auction transition goals and would unduly impede its goal of preserving a vacant channel for white space devices and wireless microphones. The Commission recognizes that some Class A television stations with construction deadlines at or near the end of the transition may discover after the 39-month deadline that they need to make further modifications to their repacked facilities in order to continue serving their viewers. The Commission seeks comment whether such stations should be allowed not to make the vacant channel demonstration if they instead make a showing that the modification is necessary to preserve their coverage area and population served and is necessitated by circumstances that were unforeseeable and outside of the stations' control. The Commission seeks comment on other alternatives as well.

20. The Commission tentatively concludes that it has authority to adopt the foregoing proposals related to Class A stations. As discussed above, the Commission has broad authority to manage spectrum in the public interest, including the actions it proposes in this NPRM to preserve a vacant channel for white space devices and wireless microphones. The Commission also notes that, unlike with LPTV and TV translators, section 6403(b)(5) has no bearing on Class A stations. Section 6403(b)(5) provides that “[n]othing in [section 6403(b)] shall be construed to alter the spectrum usage rights of low-power television stations.” The Spectrum Act categorizes Class A stations as “broadcast television licensees,” not as low-power television stations. The Commission seeks comment on this analysis.

21. The Commission also seeks comment on whether to amend its rules to permit Class A television stations to displace previously authorized or proposed LPTV and TV translator stations where necessary to satisfy the vacant channel demonstration requirement. Section 336(f)(7)(B) of the Communications Act provides that a Class A station may not cause “interference” to a previously authorized or proposed LPTV or TV translator station. Section 336(f)(7)(B) provides that the

Commission may not grant a Class A license or approve a Class A license modification unless the applicant or licensee shows that it “will not cause . . . interference” within the protected contour of any LPTV or TV translator station that was licensed prior to the date on which the application was filed, was authorized by construction permit prior to such date, or had a pending application submitted prior to such date. The Commission’s interference prediction analysis is based on interference thresholds (D/U signal strength ratios) using OET-69 methodology. It is possible that a proposed Class A modification would comply with this requirement because it would not cause “interference” to a previously authorized or proposed LPTV or TV translator facility, but it would eliminate the last remaining vacant channel in an area. Under such circumstances, should the Commission amend its rules to allow a Class A modification proposal to displace an LPTV or TV translator station in order to preserve a vacant channel in an area for use by white space devices and wireless microphones? The Commission also seeks comment on how to choose between LPTV or TV translator stations to be displaced in a situation where there is more than one LPTV or TV translator station that, if displaced, would satisfy the vacant channel demonstration.

Full Power Television Stations

22. The Commission tentatively concludes that the vacant channel demonstration should not apply to applications for modified full power television station licenses filed during the 39-month Post-Auction Transition Period, but seeks comment on whether it should apply to full power modification applications filed after the end of this period. The Commission also seeks comment on whether the vacant channel demonstration should apply to full power allotment proceedings.

Modifications

23. The Commission believes that there is only a small likelihood that a proposal by a full power licensee to modify its facilities that complies with the Commission’s technical rules would eliminate the last remaining vacant channel in an area. Due to engineering reasons, there may be a few areas in the country that will not have a vacant channel after repacking. In order to avoid interference to co- and adjacent channel stations, full power stations must comply with certain technical provisions which prevent the operation of a full power television station on certain channels in geographic areas.

Because the Spectrum Act requires the Commission in reorganizing the television bands to “make all reasonable efforts to preserve, as of [February 22, 2012], the coverage area and population served of” full power television stations, these vacant channels will continue to be necessary after repacking to avoid interference between full power television stations. Moreover, in many areas of the country, channels that were technically available for television use were never allotted to communities for such use and are thus vacant.

24. The Commission tentatively concludes that the vacant channel demonstration requirement should not apply to applications for modified full power television station licenses filed during the 39-month Post-Auction Transition Period, including modification applications filed by stations that were not assigned a new channel in the reverse auction or repacking process. As discussed above in connection with Class A stations, exempting full power stations from the vacant channel demonstration during the transition period will facilitate a rapid, non-disruptive transition by maximizing stations’ flexibility to propose expanded facilities and alternative channels, as well as by permitting stations to coordinate modification of facilities. In addition, as with Class A stations, applying the proposed requirement to full power stations would delay their filing of applications for alternate channels and expanded facilities until final data on vacant channels is available, thereby impeding the goal of a rapid and non-disruptive 600 MHz band transition, and undermining their ability to obtain reimbursement of eligible costs within the statutory three-year reimbursement period.

25. The Commission seeks comment on whether the vacant channel demonstration should apply to full power television station modification applications filed after the end of the Post-Auction Transition Period. On one hand, the transition-related concerns noted above will no longer apply. On the other hand, the Commission recognizes full power television may need to modify their facilities from time to time in order to continue to serve their viewers. Additionally, unlike with Class A stations, there appears to be only a small likelihood that a full power television station modification would eliminate the last remaining vacant channel in an area, calling into question the need for the vacant channel demonstration with respect to full power modifications. Accordingly, the Commission seeks comment on

the benefits of applying the required demonstration to post-transition full power television station modification applications and whether these benefits outweigh the burdens. The Commission recognizes that some full power television stations with construction deadlines at or near the end of the transition may discover after the 39-month deadline that they need to make further modifications to their repacked facilities in order to continue serving their viewers. The Commission seeks comment whether such stations should be allowed not to make the vacant channel demonstration if they instead make a showing that the modification is necessary to preserve their coverage area and population served and is necessitated by circumstances that were unforeseeable and outside of the stations' control. The Commission seeks comment on other alternatives as well. The Commission also seeks comment on whether the its broad Title III spectrum management authority encompasses the discretion to apply the vacant channel demonstration requirement to full power television station modification applications filed after the end of the Post-Auction Transition Period.

Allotment Proceedings

26. The Commission seeks comment on whether, with the exception discussed below, to require the vacant channel demonstration for full power allotment proceedings. There is presently a freeze on the filing of rulemaking petitions to change channels within the DTV Table of Allotments, to drop in new allotments, to swap channels among two or more licensees, or to change communities of license. The Commission anticipates that, after repacking, the Media Bureau will lift filing freezes that are now in place. Future allotment proceedings would propose a primary use in the television bands. Unlike proposed full power modifications, however, there is a reasonable likelihood that some of these proposed allotments could have a significant impact on vacant channel availability. For example, a proposal to drop in a new full power television channel could eliminate at least one vacant channel in a large geographic area. Similarly, a change of community of license could permit the licensee to move its transmission facilities in such a way as to significantly change its coverage contour. Channel changes and channel swaps appear to present less potential to affect vacant channel availability. Unless a station proposes to move from below channel 21 to channel 21 or above, it is unlikely that a petition to change

channels would have an impact on vacant channel availability, since the channel proposed to be relinquished would become vacant. Similarly, in the case of a channel swap between stations, the channel being swapped would become vacant in each station's service area. The Commission seeks comment on whether the petitioner should be required to demonstrate that the any of these allotment proposals would not eliminate the last remaining vacant channel.

27. At the same time, the Commission recognizes that there could be allotment proposals that are a direct result of certain discontinuances of service after the auction. For example, although the Commission believes it unlikely, there may be limited circumstances in which a community or area loses broadcast service from all of its noncommercial educational stations. The Commission stated previously in the Incentive Auction Report and Order that it would consider appropriate actions to address service losses after the auction. The Commission has adopted television allotment policies to implement the goals underlying section 307(b). If it decides to require the vacant channel demonstration for full power allotment proceedings generally, it may be appropriate to make an exception for rulemaking proceedings to allot a reserved noncommercial educational channel to a community that has lost all noncommercial educational full power television service as a result of the auction. The Commission also seeks comment on whether it should have a similar exception for commercial allotments in the event a community has lost all of its commercial full power television service as a result of the auction. The Commission seeks comment on this issue.

Procedures for Identifying Channels Available for Use by White Space Devices and Wireless

Microphones

28. The Commission seeks comment below on procedures for identifying which channels and which specific areas it will use for ensuring the availability of at least one vacant channel for use by white space devices and wireless microphones.

Suitable Channels for Preservation

29. The Commission proposes to preserve the availability of UHF channels in the range of

Channel 21 and above for use by white space devices and wireless microphones. Fixed white space devices may operate only when both adjacent TV channels are vacant, meaning they need three contiguous vacant channels to operate. However, personal/portable devices may operate at locations where both adjacent TV channels are occupied if their power does not exceed 40 milliwatts. Under its proposal, the channel preserved would not be the same nationwide or even through a DMA, but instead would vary depending on the repacked television operations in the UHF band in each area. In particular, the Commission is not proposing to designate a particular TV channel in each area for shared use after repacking. Rather, the procedures the Commission proposes will ensure that at least one TV channel in each area remains unused by broadcast or BAS licensees, and thereby is preserved and available for shared use by white space devices and wireless microphones.

30. Although white space devices and wireless microphones may operate on any UHF-TV channel, under the current rules personal/portable white space devices can operate only on Channels 21 and above. In addition, the current rules prohibit fixed white space device operation within the protected contour of an adjacent TV channel. In the recent part 15 NPRM, the Commission proposed to permit personal/portable white space devices to operate on Channels 14-20. In addition, the Commission proposed to allow fixed white space devices to operate within the protected contour of an adjacent TV channel if they use an operating power of 40 milliwatts or less, thereby allowing fixed devices to operate on more channels above and below channel 21. Should the Commission adopt the proposals in the part 15 NPRM to expand available frequencies for white space device operation, the Commission would want the preservation of the last remaining channel to apply to Channels 14 and above where white space devices and wireless microphones may operate and the Commission seeks comment on this alternative approach.

Demonstration of Compliance

31. In this section, the Commission proposes the procedures and other details for the required demonstration that proposed operations in the repacked UHF television band will not eliminate the last available vacant UHF channel in an area for use by white space devices and wireless microphones.

These procedures would apply only to applications for broadcast or BAS stations for those channels to which the demonstration requirement applies as decided by the Commission in this proceeding. In the case of applications for broadcast stations, a party wishing to construct a new, displacement, or modified station on one of these channels would generally follow the current procedures used in planning and applying for a broadcast station. That is, the party would perform a technical study based on the Commission's requirements (e.g., separation from TV station contours) to determine channel availability and the other operating parameters for the proposed facility (e.g., transmitter location, effective radiated power, antenna height and directionality). Once the proposed channel and operating parameters are determined, the applicant would calculate the service contour for a proposed TV or LPTV station facility based on these parameters. In the case of BAS stations, the applicant would determine its protected area in accordance with the requirements of § 15.712(c), instead of a service contour. White space devices protect fixed BAS station receive sites by avoiding co-channel and adjacent channel operation within keyhole-shaped exclusion zones. These zones are defined by an arc of ± 30 degrees from a line between the BAS receive site and its associated permanent transmitter within a distance of 80 kilometers from the receive site for co-channel operation and 20 kilometers for adjacent channel operation. Outside this ± 30 degree arc, white space devices may not operate within eight kilometers from the receive site for co-channel operation and two kilometers from the receive site for adjacent channel operation. Wireless microphones are not prohibited from operating in these exclusion zones.

32. In addition to following the above-stated procedures under the Commission's current rules, the Commission proposes that the applicant perform an analysis and submit a showing with its application demonstrating that white space devices and wireless microphones operating within the same area as the proposed broadcast or BAS station will have access to at least one channel throughout the applicant's proposed protected service area, as described in more detail below, although it need not be the same channel in all locations within that area. Under current rules, white space devices and wireless microphones must meet certain criteria to protect broadcast stations, other authorized services, and certain receive sites in the TV bands, and application of these rules defines the vacant channels in their operating

area that are available for their use. These rules form the foundation of the proposed methodology the Commission describes in more detail below that the applicant would use for making the vacant channel determination.

Criteria for Determining Vacant Channel Availability at a Given Location

33. The Commission proposes that vacant channel availability at a given location be determined using the same criteria currently specified in Commission rules for determining where wireless microphones and white space devices can operate. Specifically, the Commission proposes that a channel be considered available if it can accommodate wireless microphones and 40 milliwatt personal/portable devices operating in a manner that meets the Commission's existing rules for protecting co-channel TV stations, other authorized services, and certain receive sites in the TV bands. Pursuant to §§ 15.712(a)(2) and 74.802(b)(1), 40 milliwatt personal/portable white space devices and wireless microphones must meet the same protection criteria with respect to protecting co-channel TV stations (four kilometers outside of the station's protected contours). Personal/portable white space devices operating at this power level can operate within the service contours of adjacent channel TV stations, thus allowing their operation at locations where there is only a single available channel. Personal/portable devices and fixed devices with a low antenna height (less than three meters height above average terrain (HAAT)) must operate at least four kilometers outside the protected contour of co-channel TV stations. Fixed devices operating with higher antenna heights must comply with greater co-channel separation distances, and all fixed devices, as well as personal/portable devices operating at greater than 40 milliwatts, must comply with adjacent channel separation distances as well. The requirement to comply with adjacent channel separation distances means that all fixed devices and personal/portable devices with a power level greater than 40 milliwatts may operate only at locations where there are three contiguous vacant TV channels, while personal/portable devices operating at 40 milliwatts need only a single available channel. Specifically, the Commission proposes that broadcast applicants required to make a vacant channel demonstration must show that, at a minimum, 40 milliwatt personal/portable white space devices and wireless microphones could operate anywhere within the applicant's proposed protected area

(i.e., after accounting for the proposed broadcast or BAS operations, there is at least one channel at all locations within the broadcast or BAS station's proposed protected area that meets the protection criteria for co-channel TV stations, other authorized services and certain receive sites in the TV bands).

34. In the part 15 NPRM, the Commission proposed to reduce the required separation distance between 40 milliwatt personal/portable devices and co-channel TV service contours from four kilometers to 1.3 kilometers. The Commission also proposed to apply this separation distance to 40 milliwatt fixed devices with an antenna HAAT of less than three meters. It also sought comment on whether the Commission should reduce the separation distance between wireless microphones and co-channel TV service contours from four kilometers to 1.3 kilometers. Should the Commission adopt these proposals, it seeks comment on whether it should also reduce the size of the protection zone for co-channel TV stations by the same amount when performing a vacant channel demonstration.

35. In addition to protecting TV service, the part 15 rules require that white space devices protect certain other services in the TV bands, including the PLMRS/CMRS, MVPD and low power TV receive sites, fixed BAS links, and wireless microphone operations at specified times/locations when registered in the databases. The protection distances for wireless microphones are one kilometer from fixed white space devices, and 400 meters from personal/portable white space devices. Because wireless microphones and temporary BAS operations operate only for limited periods of time at any given location, the Commission believes that it is appropriate to exclude those stations registered in the white spaces database from the vacant channel analysis. Thus, the Commission proposes that broadcast applicants need not consider wireless microphone operations or temporary BAS stations registered in the white spaces database when determining if their proposed operations preserve a channel for wireless microphone and white space devices.

36. The Commission also seeks comment on whether it should consider white space devices other than 40 milliwatt personal/portable devices in preserving a vacant channel. For example, should the Commission base the analysis on preserving a vacant channel for fixed devices or higher power (100 milliwatt) personal/portable devices as well? If so, what fixed device HAATs should the Commission

consider, and how would this affect the availability of spectrum for broadcast and BAS stations, since an analysis would have to consider adjacent channel spectrum use?

Methodology for Determining the Availability of a Vacant Channel in a Particular Area

37. New and Displaced Broadcast Stations. The Commission proposes that each applicant for a new or displaced TV or LPTV station required to make a vacant channel demonstration must demonstrate that, within its proposed protected area, at least one channel other than its desired channel would be available for white space device and wireless microphone use, as defined above. The same channel need not be available in all locations within a station's proposed protected area. This analysis must take into account the part 74 and part 15 criteria that white space devices and wireless microphones must meet to protect other co-channel broadcast and other services located close by, as discussed above.

38. Under the Commission's proposed approach, applicants could use the white spaces databases to determine whether at least one channel would remain available for white space devices and wireless microphones within a station's proposed protected area. The white spaces databases are designed to provide lists of available channels that can be used by a white space device at the device's specific geographic coordinates (i.e., a single point). A white space device must contact a database to obtain a list of available channels before transmitting and must contact a database at least once per day thereafter to ensure that its operating channel continues to remain available. The co-channel television protection requirements for wireless microphones are the same as for 40 milliwatt personal/portable white space devices, so a channel that the white spaces database indicates as being available for 40 milliwatt personal/portable white space devices will also be available for wireless microphones. Because the white space databases provide lists of available channels for one point at a time rather than over a defined area, the Commission is proposing a procedure that will allow an applicant to determine channel availability over an area by using channel lists for individual points within its proposed protected area of operations.

39. Specifically, the Commission proposes that the availability of channels for white space devices and wireless microphones be determined by using the white spaces databases to analyze a single point within each individual two-by-two kilometer cell of a grid that covers the entire proposed protected

area of operations. An example of a grid is shown in Figure 1 below. The Commission proposes a two kilometer grid size as a balance between minimizing the number of individual points that must be analyzed and ensuring that the analysis is sufficiently detailed so as not to miss locations where no vacant channel is available. A larger grid size reduces the number of points that must be analyzed, while a smaller grid size increases the number of points. Also, a two kilometer grid size is consistent with the methodology the Commission has used for evaluating TV coverage and interference. The Commission notes, however, that in its 2004 Report and Order adopting the digital rules for LPTV, TV translator and Class A stations, it concluded that use of a 1 square kilometer grid resolution should be the maximum permitted in evaluating the interference to Class A, LPTV and TV translator facilities, whose smaller service area require a finer grid resolution analysis. For the purpose of this analysis, the Commission proposes that the TV station proposed protected area be calculated in accordance with the methodology in §§ 74.802(b)(1) and 15.712(a)(1)-(2) of the rules, since those sections define the co-channel TV station operations that wireless microphones and white space devices must protect. Wireless microphones and 40 milliwatt white space devices must operate at least four kilometers outside the protected contour of co-channel television stations. In addition, the Commission proposes that all cells that are within or overlap any portion of the proposed protected area be analyzed for white space device and wireless microphone channel availability, and that the availability be calculated at a single point at the center of each cell. In proposing to require analysis for only a single point in each cell, the Commission recognizes that it is not computationally practicable to evaluate white space device and wireless microphone channel availability at every possible location in a cell. The Commission also proposes that, as long as at least one channel would remain available for white space devices and wireless microphones at the center point of each cell requiring analysis, the applicant's vacant channel demonstration would be satisfied.

40. Modifications to Existing Broadcast Stations. The Commission proposes that an applicant required to make a vacant channel demonstration that wishes to modify an existing broadcast station that would result in a change to the station's protected area must demonstrate that at least one channel would remain available for white space devices and wireless microphones in those portions of the

proposed protected area that would extend beyond its existing protected area. The Commission recognizes that there could be situations in which there are no vacant channels for white space devices and wireless microphones within portions of the station's existing protected area, but the Commission is not proposing that the vacant channel demonstration be applied to these areas. To do so could jeopardize the station's ability to maintain service to the public within the existing protected area, depending on channel availability within the area and whether further station modifications would be needed.

41. The Commission proposes that an applicant requesting to modify an existing broadcast station provide a showing of compliance, using the methodology described above that is performed over the portions of the proposed protected area that would extend beyond the existing protected area. In this case, the channel availability analysis would be performed on the station's proposed protected area after excluding all cells that are within or overlap any portion of the station's existing protected area. The Commission further proposes that as long as at least one channel would remain available for white space devices and wireless microphones at the center point of each cell requiring analysis, the vacant channel demonstration would be satisfied.

42. BAS stations. The Commission proposes that each applicant for a new or displaced BAS station required to make a vacant channel demonstration must demonstrate that, within the entire proposed protected area, at least one channel other than the desired channel would continue to be available for white space device and wireless microphone use within that area. Wireless microphones are not required to avoid the BAS receive site exclusion zones that white space devices must avoid. Thus, a channel that is available for white space devices would also be available for wireless microphones. An applicant could demonstrate compliance with this requirement using the methodology described above, except that the protected area for a BAS station would be the exclusion zones defined in § 15.712(c) rather than a service contour plus four kilometers. Since § 15.712(c) requires white space devices to provide both co-channel and adjacent channel protection to the BAS, the analysis must be performed on co- and adjacent channels that fall within the range that the Commission selects for channel preservation (e.g., channels 21 and above as proposed above). For example, an applicant for a BAS station on channel

22 would have to perform analyses on channels 21, 22 and 23. An applicant for a BAS station on channel 20 would have to perform an analysis on only channel 21.

43. In the case of a modification of an existing BAS station, the applicant could provide a showing of compliance performed over only the portions of the proposed protected area that would extend beyond its existing protected area, i.e., by excluding all cells that are within or overlap any portion of the station's existing protected area. The Commission further proposes that as long as at least one channel would remain available for white space devices and wireless microphones at the center point of each cell requiring analysis, the vacant channel demonstration would be satisfied.

44. Appropriate Grid Size. The Commission seeks comment on the appropriate grid size for the vacant channel demonstration. Is two kilometers appropriate, or should the grid size be smaller or larger? Should the Commission require that the grid be oriented with the lines in north-south and east-west directions, or is there any need to specify the orientation? Should the Commission require that the grid be positioned so that the transmitter is at the intersection of two grid lines, in the center of a cell, some other position, or is there no need to specify such a requirement? At which point in a cell should the available vacant channels be determined – the center of the cell, the center of population, or some other point? What is the appropriate way to determine channel availability in cells at the edge of the proposed protected area where the center point of the cell is outside the protected area? Should the channel availability be determined at a point other than the center of such cells, and if so, which point? Does there need to be a vacant channel available in every cell, or should the Commission allow exclusion of certain cells, such as those in unpopulated areas or over water, or those in which only a small fraction of the area of a cell is encompassed within the edge of the proposed protected area? Would the white space database administrators have to make any changes to their systems as a result of the Commission's proposed changes? Is there an alternative method for analyzing wireless microphone and white space device channel availability in order to determine whether a vacant channel for their operation remains? Parties that wish to propose alternative methods should describe them in detail and explain how they would be practically implementable for broadcast applicants.

45. The Commission’s proposed methodology is designed to make the process of determining channel availability over an area simple for broadcasters by limiting the analysis to a finite number of discrete points and using the existing white spaces databases which are capable of performing the necessary channel availability calculations at each point. There are several ways that a broadcaster could demonstrate compliance with the proposed requirement. For example, an applicant could perform the analysis by plotting the protected area on a grid and accessing one of the white space databases to determine channel availability at the center point of each cell where a vacant channel determination is required. Alternatively, a white space database administrator could perform an entire analysis and charge a reasonable fee for its services.

46. Finally, recognizing that channel availability is dynamic and can change day-to-day, the Commission proposes that broadcast applicants make a vacant channel demonstration only once – as of the date of the filing of their application, and as discussed in paragraph 35 above. In addition, the analysis needs to consider only long-term restrictions on unlicensed use and not wireless microphone or temporary BAS installations. The Commission believes this proposal is appropriate given that broadcast applications are, for the most part, protected from interference from subsequently-filed applications (“cut-off”) on the day they are filed. The Commission notes, however, that applications filed during the post-incentive auction displacement window will be considered as filed on the last day of the window. In Section III.A. *supra*, the Commission seeks comment on procedures for resolving mutually exclusive displacement applications filed by two or more stations that together would eliminate the sole remaining vacant channel in an area. The Commission seeks comment on this proposal.

Initial Regulatory Flexibility Act Analysis

47. As required by the Regulatory Flexibility Act of 1980, as amended (“RFA”)¹ the Commission has prepared this present Initial Regulatory Flexibility Analysis (“IRFA”) concerning the possible significant economic impact on small entities by the policies and rules proposed in this NPRM of

¹ See 5 U.S.C. 603. The RFA, *see* 5 U.S.C. 601 *et seq.*, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (“SBREFA”), Pub. L. 104-121, Title II, 110 Stat. 847 (1996). The SBREFA was enacted as Title II of the Contract with America Advancement Act of 1996 (“CWAAA”).

Proposed Rulemaking (NPRM). Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments indicated in the DATES section of the NPRM. The Commission will send a copy of the NPRM, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration (“SBA”).² In addition, the NPRM and IRFA (or summaries thereof) will be published in the Federal Register.³

Need for and Objectives of the Proposed Rules

48. On June 2, 2014, the Commission released its Incentive Auction Report and Order, 29 FCC Rcd 6567 (2014), 79 FR 48442, August 15, 2014, adopting rules to implement the broadcast television spectrum incentive auction authorized by the Middle Class Tax Relief and Job Creation Act (Spectrum Act). The Commission recognized that following the incentive auction and repacking of the television band there would likely be fewer unused television channels available for use by either unlicensed “white space” devices or by wireless microphones and other low power auxiliary stations (collectively “wireless microphones”). However, the Commission anticipated that there would be at least one channel in the ultra-high frequency (“UHF”) band in all areas in the United States that is not assigned to a television station in the repacking process and, given the importance of white space devices and wireless microphones to businesses and consumers, stated its intent, after additional notice and an opportunity to comment, to preserve one television channel in each area for shared use by these devices.

49. In this NPRM, the Commission tentatively concludes to preserve a vacant channel in each area. Specifically, the Commission seeks comment on which applicants proposing operations in the repacked UHF television band should be required to demonstrate that a new, displacement, or modified facility would not eliminate the last available vacant television channel in an area for shared use and when this technical showing requirement should commence. In order to achieve this objective, the Commission proposes to require certain applicants for LPTV, TV translator, and Broadcast Auxiliary Service (“BAS”) facilities to demonstrate that their proposed new, displacement, or modified facility would not eliminate

² See 5 U.S.C. 603(a).

³ Id.

the last available vacant UHF television channel for use by white space devices and wireless microphones in an area.

50. The Commission believes that its proposal will not significantly burden broadcast applicants in terms of either the continued availability of channels in all areas or the administrative burdens of compliance. After the final channel assignments are made following the incentive auction, multiple vacant channels will exist in most areas as a result of the co- and adjacent-channel separation requirements necessary to protect primary broadcast stations from interference from each other. The 100 repacking simulation results previously published by Commission staff show that the areas encompassing the vast majority of population across the country would have at least two vacant channels available. In any event, the effect of the proposal would be to reduce by only one the total number of vacant channels that would otherwise be available in an area. Therefore, the impact on broadcast applicants, including LPTV, TV translator and BAS stations, in terms of the availability of channels for future use, will be limited because multiple vacant channels will still exist in all or most areas as a consequence of the need to avoid interference between primary broadcast stations in the Incentive Auction final channel assignment process. In addition, the proposed plan involves a streamlined method for broadcast applicants to determine quickly the impact that facilities they intend to propose will have on the continued availability of vacant channels. Although small entity LPTV, TV translator and BAS stations may experience an increased burden, the Commission believes that adoption of the vacant channel preservation requirement will greatly benefit white space and wireless microphone users as well as the manufacturers of white space and wireless microphone equipment, which are also small businesses, by creating new uses and opportunities for this spectrum. The Commission also believes that this prioritization and protection of white space is critical if it is to realize the benefits that this spectrum will provide to small businesses and developers that will usher forth new and unthought-of uses. We also note that, in a separate proceeding, the Commission is considering additional proposals to mitigate the potential impact of the incentive auction and the repacking process on LPTV and TV translator stations and to help preserve the important services they provide. See Amendment of Parts 73 and 74 of the

Commission's Rules to Establish Rules for Digital Low Power Television, Television Translator, and Television Booster Stations, MB Docket No. 03-185, Third Notice of Proposed Rulemaking, 29 FCC Rcd 12536 (2014), 79 FR 70824, November 28, 2014.

51. The Commission also seeks comment on how to identify vacant television channels (i.e., “white spaces”) available for use by white space devices and wireless microphones, the definition of the “area” that would be considered for this purpose, and what kind of system it should establish for applicants to use to determine whether their proposed facility would eliminate the last available vacant channel in an area.

Legal Basis

52. The authority for the action proposed in this rulemaking is contained in sections 1, 4, 7, 301, 303, 307, 308, 309, 310, 316, 319, 332, 336, and 403 of the Communications Act of 1934, 47 U.S.C 151, 154, 157, 301, 303, 307, 308, 309, 310, 316, 319, 332, 336, and 403.

Description and Estimate of the Number of Small Entities to Which the Proposed Rules Will Apply

53. The RFA directs the Commission to provide a description of and, where feasible, an estimate of the number of small entities that will be affected by the proposed rules, if adopted.⁴ The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small government jurisdiction.”⁵ In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act.⁶ A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and

⁴ Id. at section 603(b)(3).

⁵ 5 U.S.C. 601(6).

⁶ Id. at section 601(3) (incorporating by reference the definition of “small business concern” in 15 U.S.C. 632). Pursuant to 5 U.S.C. 601(3), the statutory definition of a small business applies “unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register.” 5 U.S.C. 601(3).

(3) satisfies any additional criteria established by the SBA.⁷

54. Small Businesses, Small Organizations, and Small Governmental Jurisdictions. Our action may, over time, affect small entities that are not easily categorized at present. We therefore describe here, at the outset, three comprehensive, statutory small entity size standards.⁸ First, nationwide, there are a total of 28.2 million small businesses, according to the SBA.⁹ In addition, a “small organization” is generally “any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.”¹⁰ Nationwide, as of 2012, there were approximately 2,300,000 small organizations.¹¹ Finally, the term “small governmental jurisdiction” is defined generally as “governments of cities, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand.”¹² Census Bureau data for 2012 indicate that there were 90,056 local governments in the United States.¹³ Thus, we estimate that most governmental jurisdictions are small.

55. Television Broadcasting. This economic census category “comprises establishments primarily engaged in broadcasting images together with sound. These establishments operate television broadcasting studios and facilities for the programming and transmission of programs to the public.”¹⁴ The SBA has created the following small business size standard for Television Broadcasting firms: those having \$14 million or less in annual receipts.¹⁵ The Commission has estimated the number of licensed

⁷ 15 U.S.C. 632. Application of the statutory criteria of dominance in its field of operation and independence are sometimes difficult to apply in the context of broadcast television. Accordingly, the Commission’s statistical account of television stations may be over-inclusive.

⁸ See 5 U.S.C. 601(3)–(6).

⁹ See SBA, Office of Advocacy, “Frequently Asked Questions,” http://www.sba.gov/sites/default/files/FAQ_March_2014_0.pdf (last visited May 2, 2014; figures are from 2011).

¹⁰ 5 U.S.C. 601(4).

¹¹ NATIONAL CENTER FOR CHARITABLE STATISTICS, THE NONPROFIT ALMANAC (2012).

¹² 5 U.S.C. 601(5).

¹³ U.S. CENSUS BUREAU, GOVERNMENT ORGANIZATION SUMMARY REPORT: 2012 (rel. Sep. 26, 2013), http://www2.census.gov/govs/cog/g12_org.pdf (last visited June 11, 2015).

¹⁴ U.S. Census Bureau, 2012 NAICS Definitions: 515120 Television Broadcasting, <http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=515120&search=2012><http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=515120&search=2012><http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=515120&search=2012> (last visited June 11, 2015).

¹⁵ 13 CFR 121.201 (NAICS code 515120) (updated for inflation in 2010).

commercial television stations to be 1,390.¹⁶ In addition, according to Commission staff review of the BIA Advisory Services, LLC's Media Access Pro Television Database on March 28, 2012, about 950 of an estimated 1,300 commercial television stations (or approximately 73 percent) had revenues of \$14 million or less.¹⁷ We therefore estimate that the majority of commercial television broadcasters are small entities.

56. We note, however, that in assessing whether a business concern qualifies as small under the above definition, business (control) affiliations must be included.¹⁸ Our estimate, therefore, likely overstates the number of small entities that might be affected by our action because the revenue figure on which it is based does not include or aggregate revenues from affiliated companies. In addition, an element of the definition of "small business" is that the entity not be dominant in its field of operation. We are unable at this time to define or quantify the criteria that would establish whether a specific television station is dominant in its field of operation. Accordingly, the estimate of small businesses to which rules may apply does not exclude any television station from the definition of a small business on this basis and is therefore possibly over-inclusive to that extent.

57. In addition, the Commission has estimated the number of licensed noncommercial educational ("NCE") television stations to be 395.¹⁹ These stations are non-profit, and therefore considered to be small entities.²⁰

58. The Commission has estimated that there are also 405 Class A stations, 1,939 LPTV stations and 3,689 TV translator stations.²¹ Given the nature of these services, we will presume that all of these entities qualify as small entities under the above SBA small business size standard.

¹⁶ See FCC News Release, Broadcast Station Totals as of March 31, 2015 (rel. April 8, 2015), available at: <https://www.fcc.gov/document/broadcast-station-totals-march-31-2015>.

¹⁷ We recognize that BIA's estimate differs slightly from the FCC total given the information provided above.

¹⁸ "[Business concerns] are affiliates of each other when one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both." 13 CFR 121.103(a)(1).

¹⁹ See FCC News Release, Broadcast Station Totals as of March 31, 2015 (rel. April 8, 2015).

²⁰ See generally 5 U.S.C. 601(4), (6).

²¹ See FCC News Release, Broadcast Station Totals as of March 31, 2015 (rel. April 8, 2015).

59. LPAS Licensees. There are a total of more than 1,200 Low Power Auxiliary Station (LPAS) licenses in all bands and a total of over 600 LPAS licenses in the UHF spectrum.²² Existing LPAS operations are intended for uses such as wireless microphones, cue and control communications, and synchronization of TV camera signals. These low power auxiliary stations transmit over distances of approximately 100 meters.²³

60. Low Power Auxiliary Device Manufacturers: Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing. The Census Bureau defines this category as follows: “This industry comprises establishments primarily engaged in manufacturing radio and television broadcast and wireless communications equipment. Examples of products made by these establishments are: transmitting and receiving antennas, cable television equipment, GPS equipment, pagers, cellular phones, mobile communications equipment, and radio and television studio and broadcasting equipment.”²⁴ The SBA has developed a small business size standard for Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing, which is: all such firms having 750 or fewer employees.²⁵ According to Census Bureau data for 2007, there were a total of 939 establishments in this category that operated for the entire year.²⁶ Of this total, 912 establishments had employment of less than 500, and an additional 10 establishments had employment of 500 to 999.²⁷ Thus, under this size standard, the majority of firms can be considered small.

²² FCC, Universal Licensing System (ULS), available at <http://wireless.fcc.gov/uls/index.htm?job=home> (last visited June 11, 2015).

²³ 47 CFR 74.801.

²⁴ U.S. Census Bureau, 2012 NAICS Definitions: 334220 Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing, <http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=334220&search=2012> (last visited May 6, 2014).

²⁵ 13 CFR 121.201, NAICS code 334220.

²⁶ U.S. Census Bureau, Table No. EC0731SG3, Manufacturing: Summary Series: General Summary: Industry Statistics for Subsectors and Industries by Employment Size: 2007 (NAICS code 334220), http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_31SG3. The number of “establishments” is a less helpful indicator of small business prevalence in this context than would be the number of “firms” or “companies,” because the latter take into account the concept of common ownership or control. Any single physical location for an entity is an establishment, even though that location may be owned by a different establishment. Thus, the numbers given may reflect inflated numbers of businesses in this category, including the numbers of small businesses.

²⁷ Id. An additional 17 establishments had employment of 1,000 or more.

61. Low Power Auxiliary Device Manufacturers: Other Communications Equipment Manufacturing. The Census Bureau defines this category as follows: “This industry comprises establishments primarily engaged in manufacturing communications equipment (except telephone apparatus, and radio and television broadcast, and wireless communications equipment).”²⁸ The SBA has developed a small business size standard for Other Communications Equipment Manufacturing, which is: all such firms having 750 or fewer employees.²⁹ According to Census Bureau data for 2007, there were a total of 452 establishments in this category that operated for the entire year.³⁰ Of this total, 448 establishments had employment below 500, and an additional 4 establishments had employment of 500 to 999.³¹ Thus, under this size standard, the majority of firms can be considered small.

62. Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing. The Census Bureau defines this category as follows: “This industry comprises establishments primarily engaged in manufacturing radio and television broadcast and wireless communications equipment. Examples of products made by these establishments are: transmitting and receiving antennas, cable television equipment, GPS equipment, pagers, cellular phones, mobile communications equipment, and radio and television studio and broadcasting equipment.”³² The SBA has developed a small business size standard for Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing, which is: all such firms having 750 or fewer employees. According to Census Bureau data for 2007, there were a total of 939 establishments in this category that

²⁸ U.S. Census Bureau, 2012 NAICS Definitions: 334290 Other Communications Equipment Manufacturing, <http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=334290&search=2012> (last visited May 6, 2014).

²⁹ 13 CFR 121.201, NAICS code 334290.

³⁰ U.S. Census Bureau, Table No. EC0731SG3, Manufacturing: Summary Series: General Summary: Industry Statistics for Subsectors and Industries by Employment Size: 2007 (NAICS code 334290), http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_31SG3&prodType=table (last visited May 6, 2014). The number of “establishments” is a less helpful indicator of small business prevalence in this context than would be the number of “firms” or “companies,” because the latter take into account the concept of common ownership or control. Any single physical location for an entity is an establishment, even though that location may be owned by a different establishment. Thus, the numbers given may reflect inflated numbers of businesses in this category, including the numbers of small businesses.

³¹ Id. There were no establishments that had employment of 1,000 or more.

³² The NAICS Code for this service 334220. See 13 CFR 121/201. See also http://factfinder.census.gov/servlet/IBQTable?_bm=y&-fds_name=EC0700A1&-geo_id=&-skip=300&-ds_name=EC0731SG2&-lang=en.

operated for part or all of the entire year. Of this total, 912 had less than 500 employees and 17 had more than 1000 employees.³³ Thus, under that size standard, the majority of firms can be considered small.

Description of Projected Reporting, Recordkeeping and other Compliance Requirements

63. The NPRM proposes the following new or revised reporting or recordkeeping requirements. The Commission proposes procedures that a broadcast applicant must use to satisfy the vacant channel demonstration requirement. These procedures would apply only to applications for broadcast and BAS stations by those entities and on those channels as decided by the Commission in this proceeding. A party wishing to construct a new, displacement, or modified broadcast station on one of these channels would generally follow the current procedures used in planning and applying for a broadcast station. That is, the party would perform a technical study based on the Commission's requirements (e.g., separation from TV station contours) to determine channel availability and the other operating parameters for the proposed station (e.g., transmitter location, effective radiated power, antenna height and directionality). Once the proposed channel and operating parameters are determined, the applicant would calculate the service contour for the proposed station based on these parameters. In the case of BAS stations, the applicant would determine its protected area in accordance with the requirements of § 15.712(c). The applicant would then be required to perform an analysis and submit a showing with its application demonstrating that white space devices and wireless microphones operating within the same area as the proposed broadcast or BAS station will have access to at least one channel, although it need not be the same channel in all locations.

Steps Taken to Minimize Significant Impact on Small Entities, and Significant Alternatives Considered

64. The RFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of

³³ See http://factfinder.census.gov/servlet/IBQTable?_bm=y&-geo_id=&-fds_name=EC0700A1&-skip=4500&-ds_name=EC0731SG3&-lang=en.

compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.³⁴

65. The Commission believes that its proposal will not significantly burden small entities in terms of either the continued availability of channels in all areas or the administrative burdens of compliance. After the final channel assignments are made following the incentive auction, multiple vacant channels will exist in most areas as a result of the co- and adjacent-channel separation requirements necessary to protect primary broadcast stations from interference from each other. The 100 repacking simulation results previously published by Commission staff show that the areas encompassing the vast majority of population across the country would have at least two vacant channels available. In any event, the effect of the proposal would be to reduce by only one the total number of vacant channels that would otherwise be available in an area. Therefore, the impact on small entities, in terms of the availability of channels for future use, will be limited because multiple vacant channels will still exist in all or most markets as a consequence of the need to avoid interference between primary broadcast stations in the Incentive Auction final channel assignment process. In addition, the proposed plan involves a streamlined method for broadcast applicants to determine quickly the impact that facilities they intend to propose will have on the continued availability of vacant channels. Although small entities may experience an increased burden, the Commission believes that adoption of the vacant channel preservation requirement will greatly benefit white space and wireless microphone users as well as the manufacturer of white space and wireless microphone equipment that are also small businesses by creating new uses and opportunity for this spectrum. The Commission also believes that this prioritization and protection of white space is critical if it is to realize the benefits that this spectrum will provide to small businesses and developers that will usher forth new and unthought-of uses.

66. In addition, the Commission has initiated a proceeding seeking comment on the adoption of rules to permit LPTV and TV translator stations to share channels. If adopted, channel sharing would

³⁴ 5 U.S.C. 603(c)(1)-(c)(4).

help displaced LPTV and TV translators that experience difficulty in finding new channels following the incentive auction and repacking by allowing them to share channels in markets with limited vacant channels. Further, the Commission has proposed to utilize its incentive auction optimization software to help identify available channels post-auction for displaced LPTV and TV translator stations. Finally, the Commission and its staff continue outreach to LPTV and TV translator stations to educate them on the possible impact of the incentive auction and repacking as well as this vacant channel proceedings and to continue to gather comment and input from these affected industries.

Federal Rules Which Duplicate, Overlap, or Conflict with the Commission's Proposals

67. None.

List of Subjects for 47 CFR Parts 73 and 74

Reporting and recordkeeping requirements, Television.

FEDERAL COMMUNICATIONS COMMISSION.

Sheryl D. Todd,
Deputy Secretary.

For the reasons discussed in the preamble, the Federal Communications Commission proposes to amend 47 CFR parts 73 and 74 as follows:

PART 73 – RADIO BROADCAST SERVICES

1. The authority citation for part 73 continues to read as follows:

Authority: 47 U.S.C. 154, 303, 334, 336, and 339.

2. Section 73.3572 is revised by adding paragraph (i) to read as follows:

§ 73.3572 Processing of TV broadcast, Class A TV broadcast, low power TV, TV translators, and TV booster applications.

* * * * *

(i) Vacant channel demonstration. (1) Applicability. The provisions of this paragraph (i) shall apply to:

(i) All applications filed by low power television, TV translator, and Broadcast Auxiliary Service (BAS) stations for new, displacement, or modified facilities filed on or after release of the Channel Reassignment Public Notice issued pursuant to § 73.3700(a)(2); and

(ii) Applications for modified Class A television station facilities filed more than 39 months after release of the Channel Reassignment Public Notice issued pursuant to § 73.3700(a)(2).

(2) Required showing. (i) Applicants subject to this provision shall include a showing with their application demonstrating that grant of the application will not eliminate the last remaining vacant channel in their entire proposed protected area (in the case of applications for new or displacement facilities) or expanded proposed protected area (in the case of modified facilities).

(ii) Applicants shall determine the availability of a vacant channel as of the date of the filing of their application.

(iii) Vacant channel availability for purposes of the required showing shall be determined using the criteria set forth in §§ 74.802(b)(1) and 15.712(a)(2) of this chapter. Applicants must show that, at a minimum, 40 milliwatt personal/portable white space devices and wireless microphones can operate anywhere within the entire or expanded proposed protected area. Wireless microphones and temporary BAS operations registered in the white space database shall not be considered when determining whether a proposed operation eliminates the last remaining vacant channel. The availability of channels shall be

determined by analyzing individual two by two kilometer cells of a grid that covers the entire or expanded proposed protected area of operations. The protected area for broadcast stations shall be the area defined by adding four kilometers to the contour calculated in accordance with the methodology in §§ 74.802(b)(1) and 15.712(a)(1) of this chapter. The protected area for BAS stations shall be the area defined by § 15.712(c) of this chapter. All cells that are within or overlap any portion of the entire or expanded proposed protected areas of operations shall be analyzed for vacant channel availability, and the availability shall be calculated at a single point at the center of each cell. The required showing shall be satisfied as long as at least one vacant channel remains available at the center point of each cell requiring analysis.

(iv) For purposes of the required showing, applicants shall consider only UHF channels in the range of 21 and above.

PART 74 – EXPERIMENTAL RADIO, AUXILIARY, SPECIAL BROADCAST AND OTHER PROGRAM DISTRIBUTIONAL SERVICES

3. The authority citation for part 74 continues to read as follows:

Authority: 47 U.S.C. 154, 302a, 303, 307, 309, 336 and 554.

4. Section 74.632 is revised by adding paragraph (h) to read as follows:

§74.632 Licensing requirements.

* * * * *

(h) The provisions of § 73.3572(i) of the rules shall apply to all applications filed under this rule.

5. Section 74.787 is revised by adding paragraph (d) to read as follows:

§ 74.787 Digital licensing.

* * * * *

(d) The provisions of § 73.3572(i) of the rules shall apply to all applications filed under this rule.

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